

ABSTRACT OF THE DISCLOSURE

A machine vision inspection system is programmed and operated to identify one or more lines appearing in a highly-textured and/or low-contrast surface of a workpiece. In a learning mode, a line-enhancing image is generated from a captured image of the workpiece. In various embodiments, the enhanced image is based on a previously determined technique governed by a selected value for an associated parameter. A line transform is used to transform the enhanced image. The transformed data is analyzed to identify local extrema corresponding to the lines to be identified. Part program instructions are created to automatically generate the line-enhancing image, to transform it, and to analyze the transformed data set to identify the lines to be detected. Line constraint(s) that characterize a consistent line arrangement are used to improve the speed and reliability of the line detection.